

1 STATE OF NEW MEXICO
2 ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
3 OIL CONSERVATION DIVISION
4
5
6

7 EXAMINER HEARING
8

9 IN THE MATTER OF:
10
11

12 Application of ANADARKO PETROLEUM Case 9807
13 Corporation for compulsory pooling,
14 directional drilling and an unorthodox
15 oil well location, Lea County, New Mexico.
16
17
18

19 TRANSCRIPT OF PROCEEDINGS
20

21 BEFORE: VICTOR T. LYON, EXAMINER
22

23 STATE LAND OFFICE BUILDING

24 SANTA FE, NEW MEXICO

25 November 1, 1989

CUMBRE COURT REPORTING
(505) 984-2244

ORIGINAL

A P P E A R A N C E S

FOR THE DIVISION: ROBERT G. STOVALL
Attorney at Law
Legal Counsel to the Division
State Land Office Building
Santa Fe, New Mexico

FOR THE APPLICANT: KELLAHIN, KELLAHIN & AUBREY
Attorneys at Law
117 N. Guadalupe
Santa Fe, New Mexico 87501
BY: MS. KAREN AUFREY

I N D E X

Page Number

Appearances

2

TOMMY W. THOMPSON

Direct Examination by Ms. Aubrey

4

Examination by Hearing Examiner

18

ALAN DANIELS

Direct Examination by Ms. Aubrey

21

Examination by Hearing Examiner

31

Examination by Mr. Stovall

38

Further Examination by Hearing Examiner

39

Further Examination by Mr. Stovall

43

Certificate of Reporter

45

E X H I B I T S

Admitted

(Thompson)

1. Producing Zone Map

18

2. Letter to Balband

18

3. Letter to Renoncourt

18

4. AFE

18

5. Survey of Surface Plat

18

6. Horizontal Plan and Vertical Plan

18

7. Radius of Curvature Method

18

(Daniels)

8. Garrett East Prospect

31

9. Lower Strawn Structure

31

10. Type Log

31

11. Certificate of Mailing

31

1 HEARING EXAMINER: The hearing will come to
2 order.

3 We'll take the next case, 9807.

4 MR. STOVALL: Application of Anadarko
5 Petroleum Corporation for compulsory pooling,
6 directional drilling, and an unorthodox oil well
7 location, Lea County, New Mexico.

8 HEARING EXAMINER: Appearances.

9 MS. AUBREY: Karen Aubrey, with the
10 Santa Fe firm of Kellahin, Kellahin & Aubrey,
11 appearing for the Applicant. I have two witness to be
12 sworn.

13 HEARING EXAMINER: Any other appearances?
14 Will the witnesses stand and be sworn.

15 (Witnesses sworn.)

16 HEARING EXAMINER: Proceed.

17 DIRECT EXAMINATION

18 BY MS. AUBREY:

19 Q. Would you state your name, please.

20 A. My name is Tommy Thompson.

21 Q. By whom are you employed?

22 A. I'm employed as a staff engineer for
23 Anadarko Petroleum Corporation in Midland Texas.
24 I've been employed with Anadarko for the last eight
25 years.

1 Q. And Mr. Thompson, have you previously
2 testified before of the New Mexico Oil Conservation
3 Division and had your qualifications as an engineer
4 accepted?

5 A. Yes, I have, and, yes, they were.

6 Q. In connection with this particular
7 application on behalf of Anadarko have you also
8 reviewed the mineral interest ownership and the
9 petroleum land titles in Section 33, Township 16
10 South, Range 38 East?

11 A. Yes, I have.

12 Q. Is reviewing petroleum land title matters
13 and mineral ownership part of your job at Anadarko as
14 an engineer?

15 A. It's part of my job to get involved with
16 reviewing these titles and deeds prior to Anadarko
17 initiating an economic evaluation of a prospect.

18 MS. AUBREY: Mr. Examiner, Mr. Thompson's
19 qualifications as an engineer have been accepted
20 previously. I also tender him as expert in the
21 petroleum land title and mineral ownership in
22 Section 33 for the purposes of this hearing.

23 HEARING EXAMINER: Mr. Thompson is so
24 qualified.

25 Q. (BY MS. AUBREY) Mr. Thompson, would you

1 tell the Examiner what Anadarko seeks to accomplish by
2 its application today?

3 A. Anadarko seeks the approval to drill a
4 directional well bore in the Northwest 1/4 of
5 Section 33 to establish a wildcat test in the Strawn
6 formation at 11,700 feet.

7 Anadarko also seeks to force pool two
8 parties of which their mineral interest total is less
9 than 1 percent. And we seek an unorthodox surface and
10 bottom hole location.

11 Q. Let's start with the pooling issues first,
12 Mr. Thompson. In connection with the pooling, would
13 you tell the Examiner who the parties to be pooled are
14 and exactly what their percentage interest in the
15 proposed unit is?

16 A. As far as the drill site, we seek to force
17 pool one, Mr. Balband, who has .125 percent mineral
18 interest in the prospect. And, secondly, a
19 Mr. Renoncourt, who has .17 percent mineral interest
20 in the drill site.

21 Q. Has Anadarko attempted to contact
22 Mr. Balband and Mr. Renoncourt in order to obtain
23 their voluntary participation in this unit?

24 A. Yes. On October 10th, 1989, Anadarko
25 submitted a written request for lease of their mineral

1 interest, and on a prior deal in which Anadarko
2 participated in last year, Anadarko sought to identify
3 and locate each party. Both were unsuccessful.

4 Q. Have you mailed notices -- both your
5 request for voluntary participation and also your
6 notice of this hearing -- to the last known address of
7 both of those gentlemen?

8 A. Yes, we have.

9 Q. Where did you obtain those addresses?

10 A. Each of the addresses were as of public
11 record on the execution of a mineral deed executed in
12 January of 1933. That's the last known address that
13 Anadarko has been able to locate.

14 Q. And the address you have for Mr. Balband, I
15 believe, is in Paris, France?

16 A. That's correct.

17 Q. And the address you have for Mr. Renoncourt
18 is in care of a trust company in Toronto, Canada; is
19 that right?

20 A. Yes, it is.

21 Q. Have you had contract land people attempt
22 to obtain better addresses for these two gentlemen?

23 A. Yes. Anadarko has employed contract land
24 brokers to try to identify and find another
25 alternative address by means of locating some heirs of

1 the families, actually doing at least take offs of
2 tracts in the area to maybe possibly identify a more
3 up-to-date address. All have been unsuccessful.

4 Q. Were these two gentlemen also pooled by
5 Anadarko last year in connection with your Wood Well?

6 A. Yes. In June of 1988 both parties of
7 similar interests were pooled under Order R-8690.

8 Q. In the event that your application is
9 granted, are you willing to place such funds as are
10 attributable to Mr. Balband and Mr. Renoncourt's
11 interest in escrow in Lea County, New Mexico?

12 A. Anadarko is, yes.

13 Q. Mr. Thompson, what risk penalty factor is
14 Anadarko seeking in this matter?

15 A. Anadarko seeks a 200 percent penalty, the
16 maximum.

17 Q. Let me have you refer to what we have
18 marked as Exhibit No. 1 and explain to the Examiner
19 what the well location is that's shown on there and
20 also what the various colored areas are.

21 A. Exhibit No. 1 is a Producing Zone Map. The
22 scale of the map is 1 inch equals 5,000 feet. It
23 indicates, first off, our proposed location in
24 Section 33 by a red dot and arrow. It shows the
25 quarter sections of 33 marked in pencil. Highlighted

1 in each of the colored areas are the known proven
2 producing fields in the area as by producing
3 formations.

4 In orange you will find Permian Age
5 production. In our particular instance, Strawn is our
6 target, and the nearest Strawn production is located
7 to the west, approximately two-and-a-half miles west
8 of us. And then some Devonian production is
9 identified by blue crosshatching.

10 Q. The Wood Well, which we referred to a
11 little earlier, in Section 28, is shown as a dry hole
12 on Exhibit 1; is that correct?

13 A. That's correct. It's located northeast of
14 the proposed location.

15 Q. And what was Anadarko's objective formation
16 in that well?

17 A. It was Strawn as well.

18 Q. Let me have you look now at Exhibits 2 and
19 3. Are these the letters that were sent to
20 Mr. Renoncourt and Mr. Balband in connection with your
21 efforts to obtain a voluntary participation?

22 A. Yes. Each Exhibits 2 and 3 are in two
23 parts. The first page of each are the actual
24 notification that Anadarko requested a leasehold from
25 each party. The second page on each is the actual

1 mineral deed as available in the abstract of
2 Lea County, New Mexico.

3 Q. Let me have you look now to Exhibit No. 4,
4 Mr. Thompson, which is an AFE for the proposed well.
5 Have you reviewed this AFE?

6 A. Yes, I have.

7 Q. And would you review it quickly for the
8 Examiner, particularly with special attention to the
9 cost of directional drilling.

10 A. Okay. Exhibit No. 4 is a typical Anadarko
11 AFE. It's broken down by category as far as dry hole
12 and completion cost. The top of the AFE refers to the
13 well name and location. In this particular instance
14 it's the J. Smith No. 1 in Section 33 in 16-38.

15 Anadarko will be operator of the proposed
16 location, and we'll have parties involved with
17 Anadarko in the drilling of this well.

18 The first column is dry hole costs, and
19 Anadarko has estimated its dry hole costs to be
20 \$554,900. This cost includes an increment of about
21 \$65,000 that we anticipate necessary to directionally
22 drill the well bore.

23 Q. Has this AFE been approved by other working
24 interest owners in the proposed unit?

25 A. We have three other parties in the proposed

1 unit, excluding the two parties we seek to force pool.
2 They were Wood Oil, TXO, and Amerada Hess. In each
3 case we have an agreement. In the case of Wood Oil,
4 we have an agreement for Wood Oil to participate in
5 the well bore.

6 Q. Is that based upon this AFE?

7 A. Yes, ma'am. They have approved this AFE.

8 As far as TXO, TXO has made a verbal
9 commitment to Anadarko to either participate or farm
10 out, based upon this AFE, and Amerada Hess has made a
11 farm-out commitment.

12 Q. In your opinion, Mr. Thompson, is the cost
13 shown on Exhibit 4 in line with other wells of this
14 depth?

15 A. Yes, they are.

16 Q. And does it appear to you to be fair and
17 reasonable?

18 A. It is.

19 Q. What is Anadarko seeking for overhead while
20 drilling and producing the well?

21 A. Anadarko requests that \$5500 per month
22 drilling rate and a \$500 producing rate for the
23 particular well bore.

24 Q. And what is that based on?

25 A. These rates are based upon a published

1 Ernst and Winney survey, dated 1987, with escalations
2 published by that survey for each of the last two
3 years for 88 and 89.

4 Those escalations are based upon a 1.4
5 percent decline in 1988 on the 87 averages, and a 3.3
6 percent incline or increase based on the prior year.
7 In each case they are average or median cost figures
8 that are represented in this survey.

9 Q. Are these costs for drilling and producing
10 overhead also in line with the costs which have been
11 agreed upon in other joint operating agreements to
12 which Anadarko has been a party?

13 A. Yes. In each case the drilling rate and
14 producing rate are the same rates that appear on an
15 executed Anadarko joint operating agreement with
16 parties in a well that's also now operated in the near
17 vicinity. They also appear on the joint operating
18 agreement for this location.

19 Q. Let me have you look now at Exhibit No. 5.
20 And I'd like you to address your comments to
21 Anadarko's request for both an unorthodox surface
22 location and an unorthodox bottom hole location.
23 Could you locate the surface location for the
24 Examiner.

25 A. Exhibit No. 5 is a survey of the surface

1 plat of Section 33. The scale is 1 to 500 feet. The
2 large circle on this plat represents the radius of the
3 irrigation system that is present on the surface.

4 A circle marked "surface location" on the
5 bottom, the Southeast Southeast -- the Southeast of
6 the Northwest 1/4 of Section 28 is a surface location.
7 Its footage location is shown to be 2440 feet out of
8 the north line, 2230 feet out of the west line. You
9 notice it's located just outside the irrigation
10 system.

11 The bottom hole location is also spotted on
12 this plat. It's location is spotted as 2 060 feet
13 from the north line, 2500 feet from the west line.
14 Its location is based upon a seismic shot point that
15 Anadarko has acquired.

16 Q. And Mr. Daniels, who is the geophysicist
17 who is here today, will give the Examiner more
18 information about the selection of that location.

19 A. Yes, he will.

20 Q. Why was it necessary for Anadarko to locate
21 the surface location outside the radius of the
22 irrigation system?

23 A. This particular surface acreage is owned by
24 the Snyder Ranches, a party in which Anadarko has
25 previously settled damages for on other wells in the

1 area. It is in the interest of both parties with
2 respect to time constraints, as well as monetary, for
3 Anadarko to locate outside of this irrigation system.

4 The irrigation system encompasses
5 approximately 220 surface acres. For Anadarko to
6 occupy the surface inside this system would condemn at
7 least five acres of the Snyder Ranch irrigation.

8 Q. Is that surface presently planted with a
9 crop?

10 A. Yes, ma'am, it is. The North 1/2 of
11 Section 33 is currently planted in cotton at this
12 time.

13 Q. Is it your plan to wait until that crop has
14 been harvested before going on the surface to begin to
15 drill this well?

16 A. Yes. That's Anadarko's intentions.

17 Q. Would you tell the Examiner what the dotted
18 square represents on Exhibit No. 5.

19 A. Also on this plat is a standard 40-acre
20 proration unit marked by a solid line in the Southeast
21 1/4 of the Northwest 1/4.

22 The dashed line represents an orthodox
23 location as far as being 330 feet from each line.
24 Both locations lie outside that orthodox location.

25 Q. Would it be possible for you to locate your

1 surface location at a standard location within that
2 square?

3 A. Yes, it would. However, in order to do so,
4 we would anticipate more problems directionally
5 drilling the well bore than we would if we stayed
6 almost due north. Southwest of the location would
7 also be further away from the bottom hole location.

8 Q. Let me have you look now to Exhibit No. 6,
9 Mr. Thompson, and would you review that for the
10 Examiner.

11 A. Exhibit No. 6 is both the vertical view and
12 a horizontal view of Anadarko's intended directional
13 drill program. On the left side of the page is a
14 vertical plan. It shows Anadarko's proposed kickoff
15 point of the 9700 feet, at which point Anadarko will
16 begin to build -- angle it at the rate of 1 1/2
17 degrees per hundred feet.

18 We anticipate by 10,900 feet we'll have our
19 angle built sufficiently to reach our bottom hole
20 target. At that point Anadarko would pack the
21 assembly, as far as our drilling assembly, and drill to
22 a total depth of 11,000 -- a true vertical depth of
23 11,700 feet. It would require a displacement of 466
24 feet to the north, northeast.

25 Q. You've shown a target radius of 125 feet on

1 this exhibit. Can you explain for the Examiner your
2 choice of that radius.

3 A. Yes. Anadarko seeks a 125 foot radius
4 target because of the nature of shallow beds in this
5 area, it will be the tendency of the drill bit to walk
6 north, northeast. Anadarko has intentions that should
7 this well bore walk sufficiently north, northeast,
8 we'd reduce our actual drilling costs with this
9 target. Our actual bottom hole target is still the
10 middle of that radius, however.

11 Q. How close close is this target area to the
12 quarter, quarter section line?

13 A. The limit of the 125 foot radius would be
14 15 feet from the existing quarter, quarter section
15 line.

16 Q. And that would be the far east edge of your
17 radius; is that right?

18 A. Yes, that would.

19 Q. Do you have an opinion as an engineer that
20 Anadarko can successfully hit the center of that 125
21 foot radius, given the drilling plan that you have
22 proposed?

23 A. Yes, I think that's entirely possible.

24 Q. Do you intend to run a multi-point survey
25 while drilling the well?

1 A. At approximately 4800 feet, the base of
2 Anadarko's intermediate program, we will run a
3 multi-shot survey to see where we lie. Again, at our
4 kickoff point we'll run a second survey and we'll
5 monitor as we drill via multi-point surveys.

6 Q. Your proposed well location is in the
7 Southeast of the Northwest; is that correct?

8 A. Yes, it is.

9 Q. The acreage which you will be crowding, if
10 your unorthodox location is approved, is the acreage
11 in the Northeast 1/4 of Section 33; is that right?

12 A. Yes, it is.

13 Q. Can you describe the mineral interest
14 ownership in the Northeast 1/4 of Section 33 for the
15 Examiner.

16 A. Anadarko owns a 100 percent lease in the
17 Northeast 1/4 of Section 33.

18 Q. When did that lease expire, Mr. Thompson?

19 A. That lease expires in May of 1990.

20 Q. Let me have you look now at Exhibit No. 7
21 and describe what that is for the Examiner.

22 A. Exhibit No. 7 is the same data as is
23 presented on Exhibit No. 6 except it's presented in a
24 tabular form. It shows the actual measured depth or
25 drift direction in degrees and our true vertical depth

1 of the proposed directional drilling program.

2 Q. Mr. Thompson, in your opinion will granting
3 Anadarko Petroleum Corporation's application promote
4 conservation, protect correlative rights, and prevent
5 waste?

6 A. Yes, I do think so.

7 Q. Were Exhibits 1 through 7 prepared by you
8 or under your supervision and direction?

9 A. Yes, they were.

10 MS. AUBREY: Mr. Examiner, I offer
11 Exhibits 1 through 7, and I have no more questions of
12 the witness at this time.

13 HEARING EXAMINER: Is there objection?

14 Exhibits 1 through 7 will be accepted in
15 the record.

16 EXAMINATION

17 BY HEARING EXAMINER:

18 Q. Mr. Thompson, what did you say was the
19 target, the objective?

20 A. The Strawn Horizon at 11,700 feet is
21 Anadarko's proposed producing horizon.

22 Q. You'll have another witness who will
23 discuss why that location is sought?

24 A. Yes, sir.

25 Q. Have you entered into that joint operating

1 agreement on this well?

2 A. We have submitted a joint operating
3 agreement to all parties. We're currently waiting for
4 Amerada Hess, Wood Oil, and TXO to finalize their
5 commitments.

6 Q. But no other party has signed that
7 agreement to this date; is that right?

8 A. No, sir, they have not.

9 Q. How much additional cost is there to
10 drilling this well directionally, as opposed to
11 drilling a conventional well?

12 A. An increment on the dry hole cost, Anadarko
13 estimates to be \$65,000. That's a minimum increment.

14 Q. Have you looked at alternatives to drilling
15 directionally, that is, drilling within the radius of
16 your irrigation project and taking measures to protect
17 the interests of the surface occupant?

18 A. Yes, we have.

19 Q. And the diagram that you showed on
20 Exhibit 5, the dashed line indicates the area where
21 you could drill a standard location; is that correct?

22 A. As a surface location, yes, sir, as well as
23 bottom hole. Anadarko surface location is the closest
24 location to the south quarter quarter line, which is
25 the occupation line on this ranch. With mutual

1 discussions with the landowner, the Snyder Ranches, we
2 feel like this is our best surface location.

3 Q. And you could not negotiate under any terms
4 the drilling of a straight hole?

5 A. Not that would not exceed incremental cost
6 to directionally drill the well bore, no, sir.

7 Q. As I recall, your application asks for a
8 target radius of 150 feet; is that right -- no, I'm
9 sorry. I was mistaken?

10 A. I believe it's 125 feet.

11 Q. It is 125. I don't know where I got that
12 150 feet. It certainly wasn't from the notes.

13 Have you been in contact with the mineral
14 owner under the Northeast 1/4 of this section?

15 A. Anadarko has that mineral interest under
16 lease.

17 Q. Yes, but you said it expired in May of
18 1990?

19 A. May of 1990, yes, sir. It would be typical
20 for Anadarko to be in contact with this mineral
21 interest owner to either extend this lease, should we
22 not get a directional test and a successful test off,
23 yes, sir.

24 Q. Should you not be successful in extending
25 that lease or renewing the lease, whoever picks that

1 lease up might suffer some impairment of correlative
2 rights, wouldn't they?

3 A. That's possible. They would also benefit
4 from an offset location that would prove this bases
5 being present, as well as porosity, yes, sir.

6 HEARING EXAMINER: I believe that's all I
7 have. Do you have any questions?

8 Anybody have any questions of the witness?
9 The witness may be excused.

10 DIRECT EXAMINATION

11 BY MS. AUBREY:

12 Q. Would you state your name for the record,
13 please.

14 A. Alan Daniels.

15 Q. Mr. Daniels, by whom are you employed?

16 A. Anadarko Petroleum.

17 Q. What do you do for Anadarko?

18 A. I'm a senior staff geophysicist.

19 Q. Have you ever testified before the
20 New Mexico Oil Conservation Division before?

21 A. No, ma'am.

22 Q. Would you review your professional degrees
23 and your work experience for the Examiner.

24 A. I have a degree in geology from the
25 University of Iowa, 1969. I've been employed as a

1 geophysicist most of my career. I started out with
2 City Service in 1969 as a geophysicist trainee. I've
3 work as a geophysicist for the last 20 years for
4 various oil companies.

5 Q. How long have you been with Anadarko?

6 A. Nine years.

7 MS. AUBREY: Mr. Examiner, I tender
8 Mr. Daniels as an expert geophysicist.

9 HEARING EXAMINER: Mr. Daniels is so
10 qualified.

11 Q. (BY MS. AUBREY) Mr. Daniels, are you
12 familiar with the subject of Anadarko's application in
13 this case?

14 A. Yes, ma'am.

15 Q. Would you briefly review for the Examiner
16 your involvement in the decision to drill this well
17 and to file the application before the Oil
18 Conservation Division.

19 A. We got into this area about two years ago.
20 If you open the first or the next plat, Exhibit No. 8,
21 I'll show you the seismic lines that we have run. If
22 you see the blue dot on the map, that's our bottom
23 hole location. The next line to the east is line B of
24 Green Meadow Lake. It runs Northeast-Southwest. That
25 was the first line we acquired in this area. That was

1 about two years ago. And I had an anomaly on that
2 line at the time.

3 Subsequent to that line I shot line D --
4 it's at the top of the map running east and west. And
5 you'll see a dry hole right where all those lines
6 intersect. That's where we drilled our Wood Well.
7 That is the No. 1 Wood. That's in Section 28. At
8 that time, a year and a half ago, that looked like the
9 best location with the amount of data I had. We got a
10 dry hole on that.

11 I went back and reprocessed the seismic
12 data we had in hand to try to get -- improve the
13 quality. I came back down to the center of Section 33
14 and bought a line from Geophysical Services,
15 Incorporated. It's entitled "Line 1 of Garrett East"
16 and runs right across the center of the section, east
17 and west.

18 If you look on that line, there is a shot
19 point 1970, almost in the center of the section. At
20 that time I could see a seismic anomaly, and it was
21 very coincidental with the anomaly I had on line B,
22 that I just mentioned. But I wasn't sure where the
23 highest point was. So I came back in and shot Line A
24 of Garrett East, that goes back and starts over at the
25 top of well in Section 28. It's A Garrett East and

1 runs southwest, right over the blue and red dot.

2 At the same time I shot another line. I
3 was trying to get a legal location with Line B of
4 Garrett East. It's the next line north of Line 1. So
5 it's 330 off the center, running east and west. And
6 it crosses Line A just above the red dot. I was
7 trying to come up with somewhere, right in there, as a
8 legal location.

9 What happened, structurally, I get higher
10 going back to the northeast on Line A near 1080, right
11 where the blue dot is. That's shot point 1082 is my
12 location. That's the highest structural point I can
13 get on the seismic.

14 And we're concerned with water in here, and
15 these Algal mounds are of quite steep dip. I can go
16 several hundred feet and drop 50 foot structurally on
17 the Strawn. I'll bring up another exhibit here and
18 show you that in a second.

19 Q. Would you like to look at your
20 Exhibit No. 9 now, your structure map in connection
21 with that testimony.

22 A. If that would please you, yes.

23 Exhibit No. 9 is my final interpretation of
24 the seismic in the area. This is structure on top of
25 the lower Strawn formation, which is our objective.

1 Contour interval is 50 feet. I've made it on this
2 scale so we can do detail work. This is 1 to 500
3 scale.

4 As you see, where that blue dot is up
5 there, it's in a closing -7300 foot contour, and I
6 want to get into that contour. The next contour going
7 west is 50 feet lower. So we drop 50 feet going over
8 to our legal location, if we had one. I think that
9 would probably end up with getting water and not much
10 oil, or maybe no oil.

11 Q. From your structure map, can you correlate
12 this depth with the objective depth in your Wood Well,
13 which was a dry hole?

14 A. Yes. It's -7542. I expect to be almost
15 250 feet high to it.

16 Q. And did you encounter water in that well
17 bore?

18 A. It was tight. The formation was tight. We
19 did not find the facies, which is the Algal mat facies
20 where we develop our porosity, as you do over in the
21 Shipp Field to the west.

22 Q. Why is it important to you to be
23 structurally high in the well bore we're talking
24 about?

25 A. We feel there is water in the formation

1 when we do get the porosity, and we want to be on top
2 of the structure.

3 Q. And how much -- you may have said this, but
4 I missed it -- how much would you drop in structure if
5 you were to move your bottom hole location to a
6 standard location?

7 A. Based on this, it would be at least 50
8 feet, you know, we would drop at least 50 feet lower
9 if we try to get a legal location.

10 Q. Are you the person in Anadarko who
11 recommended this proposed bottom hole location?

12 A. Yes.

13 Q. And did you do that based upon your seismic
14 study?

15 A. Yes.

16 Q. Anadarko has asked for a 200 percent risk
17 penalty factor in connection with the portion of its
18 application which pertains to the forced pooling. Can
19 you give the Examiner your opinion on that risk
20 factor?

21 A. I think it's justified.

22 Q. Would you explain why.

23 A. I'm not sure I understand that question
24 exactly, so maybe I'm -- go through that with me, why
25 I think it's justified --

1 Q. As a geophysicist can you give the Examiner
2 some information from which to conclude that he would
3 be justified in imposing a 200 percent risk factor in
4 connection with the pooling portion of this
5 application?

6 A. Well, first of all, this is a wildcat, and
7 it's risky. There is error in the seismic. I've done
8 the best I can do in making the map. As you know,
9 I've already drilled one dry hole in here, so it's
10 pretty expensive when you do one of those. It's
11 risky. That's all I can say about it.

12 Q. Do you know what the nearest Strawn
13 production is?

14 A. Yes. It's just to the west -- on this
15 scale you can't see it. I need that other map.

16 Q. You want to refer to Exhibit No. 1?

17 A. The nearest Strawn is 2 1/2 miles. It's
18 over to the west. Here it is.

19 It's in Section 31, which is -- yes, on the
20 very west side of Section 31, in the Southwest 1/4.
21 That well was just completed this year.

22 Q. And is that producing in the Strawn?

23 A. To my knowledge, it is, yes.

24 Q. From your structure map, do you have an
25 opinion as to the trend of the Strawn toward the east?

1 A. Toward the east?

2 Q. Yes.

3 A. My interpretation indicates, should we be
4 successful on this, we will probably have more
5 locations to the east, which we're not really prepared
6 to discuss right now, but, yes, I think it trends to
7 the east. As you see down in the southeast part of
8 Section 33 I have another closed contour in there.
9 That's a structure on top of the Strawn.

10 Q. Let me have you look now at Exhibit
11 Number 10, which is a type log. Where is the well
12 that this log was run on?

13 A. This well was -- if you go back to
14 Exhibit 1, it's in Section 4-17-37. So it's 1, 2, 3,
15 4, 5 -- it approximately 5 miles to the west.

16 Q. Is it producing from the Strawn?

17 A. Yes. I have a seismic line -- I don't have
18 it here, but I've got a seismic line right over this
19 well, in fact. I know what the seismic character
20 looks like over this production.

21 Q. Would you review the log for the Examiner?

22 A. This is a density log or neutron density
23 log. The top of the Lower Strawn is marked. On the
24 gamma rays you have a good shale break above it. On
25 the neutron log you see a good break when we hit the

1 top of the Lower Strawn. As we go in approximately 50 --
2 about 60 feet, we hit a porosity zone on the neutron
3 side. It kicks way in. We get up to 8 to 10 percent
4 on some spots in there.

5 You will see right in the center of the log
6 it says the "pay zone," that's the overall producing
7 zone in that Strawn formation. I don't know where the
8 exact perforations are, but they are down through that
9 zone.

10 Q. Would you expect to find similar porosity
11 at your proposed bottom hole location?

12 A. The character I've got on my seismic
13 resembles the character I have over here. We get a
14 character change on the seismic. The actual
15 reflection does change over these things.

16 And there is structure involved on these.
17 If you get off of one of these little anomalies,
18 they've found water. We have cross-sections over
19 several wells. You get a dry hole. We go up dip a
20 little bit. Once you've found the porosity, you will
21 get more oil, and then on top, you get straight oil.
22 That's why I was so insistent we get on top of this
23 structure.

24 Q. Mr. Daniels, can you refer back to Exhibit
25 No. 8 and discuss for the Examiner the number of

1 seismic lines that are shown on that exhibit, and
2 whether or not that's the usual number that Anadarko
3 would run for a prospect of this nature?

4 A. No. Like I said, I had couple of lines
5 originally that we ran and we chose to drill our first
6 well in 28. Subsequent to that I came back and bought
7 a line, and I shot two more new lines, which are Line
8 A and B of Garrett East, trying to get a legal
9 location off the anomaly I had in the very center of
10 the section.

11 If I didn't have a lead in there I would
12 not have shot this many lines, no, if that answers
13 your question. I have this many over this section
14 because I started seeing an anomaly on the original
15 line we ran.

16 Q. Mr. Daniels, in your opinion, will the
17 granting of Anadarko's application protect correlative
18 rights, promote conservaton and prevent waste?

19 A. Yes, ma'am.

20 Q. Were Exhibits, 8, 9 and 10 prepared by you
21 or at your direction?

22 A. Yes.

23 MS. AUBREY: Mr. Examiner, I tender
24 Exhibits 8, 9, and 10. I also tender Exhibit No. 11,
25 which you have, which is the original Certificate of

1 Mailing with the green certified mail cards attached
2 to it. I have no more questions of the witness at
3 this time.

4 HEARING EXAMINER: Which exhibits?

5 MS. AUBREY: 8, 9, and 10.

6 HEARING EXAMINER: Is there objection?

7 Exhibits 8, 9, and 10 will be introduced into the
8 record.

9 MS. AUBREY: And I've also tendered Exhibit
10 No. 11, which was prepared in our office and is a
11 Certificate of Mailing.

12 HEARING EXAMINER: And Exhibit 11.

13 EXAMINATION

14 BY HEARING EXAMINER:

15 Q. Mr. Daniels, I'm still a little bit
16 confused with your seise lines. Garrett East was a
17 contractor that --

18 A. No, sir, that's name of our prospect area.
19 When we write an AFE, we give it a name. Garrett is
20 one of the closest Devonian fields over there, so we
21 use that as a name. That's all that means.

22 Q. On which of the lines did you find
23 anomalies?

24 A. Okay. My original line was line B of Green
25 Meadow Lake. If you look on the contour map

1 Exhibit 9, it's labeled as the "APC No. 1 Wood." I
2 had an anomaly up there originally, and I had one down
3 here around shot -- between 1070 -- no, that's not
4 1070 -- around shot point 320. And it's hard to read
5 these on this section.

6 Q. This is a little --

7 A. You want me to come up there and kind of go
8 over it with you?

9 Q. No.

10 A. It's hard for me to talk and show you.

11 Q. Those numerals aren't distinct on this
12 copy.

13 A. Mine is eradicated too.

14 Q. And you found one where? In the vicinity
15 of shot point 320?

16 A. Yes. I had one on that original line.
17 That's why I bought the next line that goes east and
18 west through the center of the section. It also
19 showed an anomaly around shot point 1970. But you
20 see, I have question marks at those values right in
21 there on that east-west line. 1970 has a question
22 mark.

23 At the time that line was shot, about seven
24 years ago, it was a contractor -- as a group shoot by
25 one the contractors, the whole area was in production

1 across the East 1/2 of the Section 33, and they had
2 skips because of the crops.

3 MR. STOVALL: Excuse me. Let me make sure
4 we're working together on the same exhibit. Perhaps
5 that's part of the confusion. Are you looking at
6 Exhibit No. 9, which is your structure map?

7 THE WITNESS: I've got 9 out on my
8 structure map, yes.

9 MR. STOVALL: When you're making these
10 references to the question marks and this information,
11 this is on Exhibit 9?

12 THE WITNESS: Yes, that's on my contoured
13 structure.

14 MR. STOVALL: That may have been part of
15 confusion with the Examiner.

16 HEARING EXAMINER: I was looking at 8.

17 THE WITNESS: I'm sorry.

18 Q. (BY HEARING EXAMINER) Now, the question
19 marks mean what?

20 A. That I couldn't make an actual depth pick.
21 The shallow data, which is the Yates in here, was NR
22 on the seismic because they had to have so many skips
23 on the surface for crops at the time that particular
24 line was shot. The last lines I shot in here were
25 when the crops were out and we could get

1 full coverage across the area. That is why I shot the
2 east-west line just to the north, and that's Line B of
3 Garrett East. You see, there's no question marks on
4 it. It's a very good line.

5 Q. And did you have anomalies on that one?

6 A. Yes. They start approximately at 1075, the
7 character change does. And then I had the same type
8 of an anomaly on Line A, which is the one that runs
9 over the APC Wood, up to the northeast, Line A of
10 Garrett East. It comes over the red and blue dot
11 there, running southwest.

12 Q. That was the anomaly up there in your
13 previous prospect?

14 A. Yes. That's right. I tied into our well
15 so I had lots of control so I could make my depth map,
16 for one thing, on that last line. I knew what the
17 character looked like on it, and I came back.

18 Q. How about the data at your shot point 1080
19 on your Garrett East A?

20 A. It's just slightly lower structurally than
21 where the blue dot is. If you look, I've got a 7287
22 on a blue dot and I've got a 7298 -- it's not that
23 much -- about 11 feet. That would be ever more of an
24 odd location, I guess. That's right on the
25 north-south line there. It would be farther to

1 directional drill that way if we came up on the
2 surface, trying to stay out of that irrigation system.

3 Q. If you were to drill a well at this
4 location what would you recommend to protect the
5 Northeast 1/4 from drainage from that well?

6 A. What would I recommend to protect it from
7 the drainage?

8 Q. Is that the same lease? It isn't the same
9 lease, is it?

10 A. To my knowledge it's not. What we'd have
11 to do, if we're successful here, we're going to have
12 to go over there and immediately to hold those leases,
13 start another well in the Northeast 1/4. And we're
14 not worried about drainage as long as we're, you know,
15 doing the drilling. I mean it's going to be our --
16 we've got 100 percent minerals in the Northeast 1/4.

17 Q. Of course, you'll have additional data when
18 you drill that well, but based on the data you have
19 now, where would you locate that well?

20 A. In the Northeast 1/4 if I had to drill a
21 well?

22 Q. Yes.

23 A. Probably, based on structure, if I had to
24 get a legal location it would be somewhere near 73 --
25 where I have a -7318 value, and that's at shot point

1 325 on line B. It would be straight east of the blue
2 dot. It's going to be slightly structurally low but
3 not as low as we'd be if we go west in the Northwest
4 1/4.

5 Q. Your blue dot is located how far from the
6 lease line?

7 A. Do you remember, Tommy, what that was? I
8 don't have it off the top of my head. It's 140 feet.

9 Q. Then how far from the common lease line
10 would your proposed location -- a far projection of
11 where you might drill, based on information that you
12 have today, how far would that be from the common
13 lease line?

14 A. I don't quite understand the question.

15 Q. How far is your second location from the
16 common lease line for these two leases? The one lease
17 consisting in the Northwest 1/4 and the other lease
18 consisting in the Northeast 1/4?

19 A. Yeah, I understand that's where -- I don't
20 know how far that is. I don't have a ruler here. You
21 are asking me in footage?

22 Q. Yes.

23 A. I haven't measured that. I really haven't.

24 Q. How far did you say it was for your
25 proposed well?

1 A. The proposed bottom hole is about 140 feet
2 to the west of that common lease line.

3 Q. So eyeballing it, it looks like it would
4 probably be 400, 450, something like that?

5 A. Yes, it's going to be -- if we drill over
6 there I think we will be able to get a legal location,
7 is what I'm trying to say, without trying to go for an
8 odd location. If we're successful here, we'll
9 probably be able to drill a legal location in the
10 Northeast 1/4.

11 Q. Wouldn't you think that some adjustment in
12 the producing rate would be in order to protect the
13 lease in the Northeast 1/4?

14 A. I'm not -- I don't think I know how to
15 answer that.

16 Q. Well, that probably is outside your area of
17 expertise, then.

18 MS. AUBREY: Mr. Lyon, I would be happy to
19 recall Mr. Thompson, if you would like to address that
20 question to him?

21 HEARING EXAMINER: All right. We may want
22 to do that.

23 THE WITNESS: I'm not sure I'd be of
24 benefit or not. I haven't really worked on that.

25 MR. STOVALL: If we recall Mr. Thompson, I

1 would like to ask some questions about the leases,
2 too.

3 HEARING EXAMINER: I think that's all the
4 questions I have of Mr. Daniels.

5 THE WITNESS: Okay.

6 HEARING EXAMINER: Would you -- I'd like to
7 recall Mr. Thompson.

8 MS. AUBREY: I'd be happy to.

9 MR. STOVALL: If I might ask a couple of
10 questions, first, Mr. Examiner. I think I understand
11 where you're going, and perhaps we can get some
12 preliminary information out of the way which will
13 raise or eliminate the concern that you've got.

14 HEARING EXAMINER: Go right ahead.

15 EXAMINATION

16 BY MR. STOVALL:

17 Q. Do you have knowledge as to who lessors
18 are, the mineral owners, in Section 33 Northeast and
19 Northwest?

20 A. Yes, I do.

21 Q. Are they the same in both proration units
22 that we are looking at?

23 A. No, they are not.

24 Q. They are not. Okay. So even if you are
25 able to retain the lease, you would retain the working

1 interest. The working interest would be the same in
2 that, those two quarter sections, but not the fee
3 mineral interest?

4 A. If I understand what you're getting at,
5 that's correct. Anadarko presently is attempting to
6 form a working interest unit that would incorporate
7 560 acres of Section 33 that might better address some
8 of the questions you have.

9 HEARING EXAMINER: I think that is probably
10 what we're looking at.

11 THE WITNESS: At this time we don't have
12 commitments on that agreement signed. We do have
13 contact with all parties involved and have not
14 received any unfavorable or contradictory information
15 at this point.

16 FURTHER EXAMINATION

17 BY HEARING EXAMINER:

18 Q. Is there any time constraint in regard to
19 drilling your proposed well?

20 A. Yes, sir. The proposed drill site location
21 in Anadarko's lease, as well as some of the leases
22 that have been tendered into this by the other
23 non-operators expires 4 of 90. One month prior --

24 Q. One month before the one in the northeast --

25 A. One month prior to the expiration of the

1 adjacent lease line; that's correct.

2 Q. I don't know if you're familiar with the
3 case that we had in the north King Camp Devonian?

4 A. No, sir, I'm not.

5 Q. But in that order we imposed a penalty on
6 the allowable for the well which was about as close as
7 your well here, based on the proportion of distance
8 moved from a standard location toward the lease line.

9 A. Okay.

10 Q. And a lot of those orders are kind of an
11 exercise in trying to project into the future. This
12 well came in a very good well, and it had a very
13 substantial penalty. We believe that the only
14 equitable way to handle that situation is to have a
15 reservoir unit. And this looks like it might be very
16 nearly the same thing.

17 Also, in the case that authorized that
18 well, it was a re-entry and directionally drilled
19 well, and we gave them a target. It was also crowding
20 the east line. And we gave them a target of a
21 semicircle of a given radius to the west of the
22 projected location.

23 A. From the adjacent lease line; is that what
24 you're saying? The semicircle would be cut off?

25 Q. From their target location, that it would

1 be completed within -- I think they asked for 200
2 feet. I'm not sure. But it was a 200 foot radius
3 west of the target location.

4 MR. STOVALL: A semicircle target as
5 opposed to a full circle target.

6 HEARING EXAMINER: Right.

7 THE WITNESS: I understand. As Mr. Daniels
8 testified, it's in Anadarko's best interest to hit a
9 bottom hole location on his shot point. It will be in
10 Anadarko's best interest to obtain as close to the
11 center of that circled target as possible. 125 feet
12 would be very critical, according to his structure
13 map. And we'd not be opposed as to -- you know, it's
14 our intentions to hit the center of that target, if
15 that's a concern.

16 HEARING EXAMINER: It is a concern.

17 THE WITNESS: As far as draining the offset
18 acreage, Mr. Examiner, analysis of Strawn producers in
19 the area establishes that approximately 80 acres can
20 be drained by a producing well bore. Should Anadarko
21 be successful in obtaining a producing well bore at
22 this location, we'll be back at the Commission
23 requesting that the field boundaries of the Shipp
24 Field be extended to include this well bore and that
25 Anadarko be allowed an 80-acre proration unit.

1 On that basis, it's our impression that
2 even at an orthodox location on this 40-acre tract,
3 that we would still feasibly drill the adjacent lease --
4 I mean drain the adjacent lease. That this difference
5 in footage from the lease line is not going to, you
6 know, has no real merit upon whether or not drainage
7 will occur.

8 HEARING EXAMINER: Well, if you form a unit
9 where the Northeast 1/4 would participate in your
10 production, I would agree with you --

11 THE WITNESS: That would resolve that
12 problem, yes, sir. We're in the process of trying to
13 establish that.

14 HEARING EXAMINER: Right.

15 THE WITNESS: As far as subsequent
16 locations in the Northeast 1/4 of Section 33, of
17 course, their merit will be upon the success of this
18 well and the data obtained from this well.

19 HEARING EXAMINER: Right.

20 THE WITNESS: As far as trying to speculate
21 how far off that lease line -- I don't believe we're
22 capable at this time.

23 HEARING EXAMINER: Right. Well, I wanted
24 to bring that to your attention as a matter of some --
25 a case of some precedent, and that in all likelihood

1 we will have such language in this order also.

2 Do you have my further questions?

3 FURTHER EXAMINATION

4 BY MR. STOVALL:

5 Q. Inasmuch as you have mentioned the Devonian
6 case, and the -- call it precedent, for lack of a
7 better word -- penalty methodology that was
8 established there, do you have an opinion as to that
9 applicability versus another method of protecting the
10 correlative rights of the offset owners?

11 A. Could I ask you to reword that, please.

12 Q. What's your opinion as to what Mr. Lyon has
13 told you with respect to his thinking as far a penalty
14 on the production?

15 A. I think I might have addressed that in the
16 nature of Anadarko's thought process, that even a
17 standard 40-acre location could possibly establish
18 drainage.

19 I don't think, in my opinion, that a
20 penalty in this case would be justified. The fact
21 that Anadarko has an adjacent lease that's due to
22 expire, that we have 100 percent leasehold interest,
23 and that this location would prove up a -- you know,
24 an alternative location to the east, all of those
25 factors involved would merit Anadarko drilling a

1 second test. That and the drainage potential from a
2 standard location. I don't believe a penalty is in
3 order in this case.

4 HEARING EXAMINER: Well, there also is the
5 consideration that if the Strawn formation has the
6 permeability characteristics of the other Strawn
7 formations in this area, that it probably would be an
8 unnecessary well, to protect that well. That your
9 existing well might very well drain the entire
10 reservoir.

11 THE WITNESS: Subsequent to drilling this
12 location we may have better data to establish the
13 extent of this field which might merit a second
14 location.

15 HEARING EXAMINER: Right. I know that
16 there are a lot of things that you can't predict with
17 that much accuracy with the data that you have right
18 now, but we're trying to establish a mechanism of
19 protecting all the interested parties.

20 Do you have anything further?

21 MS. AUBREY: I have nothing further.

22 HEARING EXAMINER: Does anybody have
23 anything further in case?

24 We'll take the matter under advisement.
25 the witness may be excused.

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Diana Abeyta, Certified Shorthand Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I caused my notes to be transcribed under my personal supervision; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL January 3, 1990.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examined hearing of Case No. 9807, heard by me on November, 19 87.

Nelson L. Lynn, Examiner
Oil Conservation Division

Diana Abeyta
DIANA ABEYTA
CSR No. 267

My commission expires: May 7, 1993